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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/467,018	12/20/1999	ARNE LUNDBACK	2380-140	1850

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EXAMINER

PRIETO, BEATRIZ

ART UNIT PAPER NUMBER

2142

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/467,018

Applicant(s)

LUNDBACK ET AL.

Examiner

Prieto Beatriz

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 1,8 and 14 is/are rejected.
- 7) ☒ Claim(s) 2-7, 9-13 and 15-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. PCT/IB98/02080.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____



DETAILED ACTION

1. This communication is in response to response filed 08/27/04, claim 8 has been amended and claims 21-22 have been added, claims 1-22 have been examined and remain pending.
2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The received certified copy has been filed in parent Application No. PCT/IB98/02080, filed on December 18, 1998.
3. Acknowledge is made to amendment to the specification on page 10, lines 15-20, to pluralize processor 30 in main processor cluster (MPC) 32.
4. Acknowledgement is made to corrected drawings filed 08/27/04.
5. Claims 2, 9 and 15 objected (3-7, 10-13, and 15-20 by virtue of dependency) to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Newly added independent claims 21-22 have subject matter substantially the same as at least claim 2 noted above, thereby, are allowed.
5. Quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.
6. Claims 1, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over (U.S. Patent No. 6,266,335) Bhaskaran.

Regarding claims 1 and 8, Bhaskaran teaches substantial features of the invention, teaching

a cluster of processor collectively performing ("platform processing") service functions (col 1/lines 15-27 and col 3/lines 53-57) and having capabilities (see col 1/lines 22-33 or col 3/lines 64 to col 4/line 1, e.g. service related);

the cluster of processors running on a platform (col 3/line 53-61) and executing service related applications (col 1/lines 15-27); plural processors of the cluster having respective Ethernet interface ports

("IP interface") (col 7/lines 21-25); plural processors of the clusters have the same IP address (Fig. 2 showing address 290 and col 5/lines 51-56);

a router ("Internet Protocol (IP) handler") distributed throughout the cluster (Fig. 2) for distributing ("IP frames") data frames throughout the cluster to the plural processors having the same IP address (col 5/lines 49-51 and col 7/lines 21-50);

receiving frames from outside the cluster of processors by the router via any one of the plural Ethernet interface ports (col 3/lines 49-57 and col 7/lines 21-25);

routing ("forwarding") the received frames to ("correct") one of the plural processors executing an ("IP software") application to an Ethernet interface port destined for receiving said frames (col 1/lines 54-58, col 4/lines 14-15, 25-26, 61-61, col 7/lines 21-50, and col 5/lines 49-51) however, although prior art does not explicitly teach wherein the frames forwarding the received frame to a particular one of the plural processors, this processor is not denoted "the correct one".

It would have been obvious to one ordinary skilled in the art at the time the invention was made given the teachings of improving the prior art augmenting a service provider by using multiple servers having a single IP address in a clustering fashion. Bhaskaran teaches forwarding the received frame destined to all servers having the same IP address to a particular one of the plural processors based on the IP interface, including selected optionally by a router using load balancing. It would be obvious to one ordinary skilled in the art the forwarding the received frame to one of the plural processors based on the IP interface of the frames or based on the load balancing scheme to compensate for varying traffic, and enabling the addition and removal of IP server, as suggested by the reference.

Regarding claim 14, this claim comprises limitations substantially the same as those discussed on claim 1, same rationale of rejection is applicable. Further limitation(s) recite, selecting one of the plural of Ethernet interface distributing data frames to one of the plural of processors of the cluster without the knowledge of which one of the processors of the cluster is hosting an IP software application (Bhaskaran: i.e. routing ("forwarding") the received frames to one of the plural processors executing an ("IP software") application to an Ethernet interface port destined for receiving said frames (col 1/lines 54-58, col 4/lines 14-15, 25-26, 61-61, col 7/lines 21-50, and col 5/lines 49-51).

Response to Arguments

7. Applicant's arguments filed 08/27/04 have been fully considered but they are not persuasive.
8. It is argued that the Bhaskaran reference does not teach claim limitation as recited, specifically, an IP handler distributed throughout the cluster, because according to applicant's interpretation, the network switch (205) *appears to be a separate, stand-alone switch and thus is not distributed* among the IP server 210-250.

In response to the above-mentioned argument, applicant's opinion of the prior art is noted, however, according to the invention's disclosure, "the Internet Protocol (IP) handler 100 which (as shown generally in Fig. 2) is also distributed over the main processors 30 comprising main processor cluster (MPC) 32. The Internet Protocol (IP) handler 100 accomplishes, e.g., single IP-addressing for a platform with a multi-processor cluster" (see p. 9, lines 15-19). Further, Fig. 2 illustrates a *single* Internet Protocol handler (50) *connected to all* main processors (MP) (30) application software (36) and to cluster support function (100). Given this description of "the Internet Protocol (IP) handler 100" which (as shown generally in Fig. 2) is described as being distributed over the main processors 30 comprising main processor cluster (MPC) 32", the illustrated network switch (205) on Fig. 2 of the Bhaskaran reference is not distinguishable from the shown Fig. 2 of the invention.

Although applicant's interpretation of the prior art has been noted, there is no evidence in the disclosure of the Bhaskaran patent describing the network switch (50) as "a separate, stand-alone switch", as argued. Contrary to applicant's interpretation, Bhaskaran discloses that "the invention is not limited to any particular hardware used to implement the network flow control switch; not limited to any particular number of Ethernet cards or to any particular kind of processor, memory controller or bus. Ethernet switching ASICs other than the Galileo GT-48002A can be used, from Galileo or other vendors, such as I-Cube or MMC Networks. Furthermore, a single processor may be used in place of CPU 402 and memory controller 406 (FIG. 4A). Buses other than a PCI bus (e.g. SCSI buses) or even crossbar switches can be used in place of a PCI bus 410 (FIG. 4A). In fact, the invention can be applied to an arbitrary number of network cards connected to an arbitrary number of networks. Other embodiments and variations are within the scope of the invention, as defined by the following claims" (col 10/lines 65-col 11/line 19).

Hence, Bhaskaran teaches away from applicant's interpretation, clearly not describing the network switch (50) as "a separate, stand-alone switch" the network switch (205), as argued by applicant.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Pertinent Prior Art:

10. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure; pertinence is presented in accordance with MPEP§ 707.05. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

Clustering, Westimacott, I., technical editor, SunExpert Magazine, June 1998, p. 78-80.

This article teaches a clustering techniques wherein a plurality of processor, i.e. servers collectively perform processing functions, the plural processors having IP capabilities, receiving/transmitting IP data and having plural IP interfaces, wherein the plural processor have the same IP address.

(US 6,370,583) (April 2002): Method/apparatus for portraying a cluster of computer systems as having a single internet protocol image

Fishler et. al. teach wherein multiple processors of a cluster as a single virtual host to a network wherein the processors are communicatively coupled among themselves and to a network interface communicatively coupled to the network. One address is advertised on said network for said multiple processors, and ("IP handler") filter trees in the network interface direct the interface to forward packets from the network addressed to that address to the primary parallel I/O processor. The cluster of processors is connected to a network by a network adapter and the cluster is assigned a single network address. When a client requests a connection to a particular port on one of the processors the network adapter is configured to directly route packets to the processor owning the port. Thus, routing all packets through one processor is avoided.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Jack B. Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to the Central Fax Office:

(703) 872-9306, for Official communications and entry;

Or Telephone:

(703) 306-5631 for TC 2100 Customer Service Office.


B. Prieto

TC 2100

Patent Examiner

November 18, 2004